REPORT TO THE BOARD OF FISHERIES,

SOUTHEAST ALASKA SHRIMP BEAM TRAWL FISHERY

By

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INTRODUCTION

The beam trawl fishery targets primarily pink shrimp *Pandalus borealis* and secondarily larger sidestripe shrimp *Pandalopsis dispar*. Other species incidentally captured and landed in smaller quantities are the coonstripe shrimp *Pandalus goniurus*, humpy shrimp *P. hypsinotus,* and the spot prawn *P. platycerous*.

Productive beam trawling has historically been limited to four major fishing areas in Southeast Alaska. These areas are District 8, portions of Districts 6 (Duncan Canal and Kah Sheets Bay), District 7 (Eastern Channel), and District 10 (Thomas and Farragut Bays), all located in the Petersburg-Wrangell Management Area (Figure 3.1). The concentration of the fishery in these areas is due to the abundance of the resource, the presence of the major processors, and limited vessel capabilities. Most vessels are less than 60' in length, utilize small horsepower engines, do not have refrigerated holds, and have a crew of two or three. Some vessels currently fishing have been participating since the inception of the fishery in 1915. Vessels strive to provide a high quality product through daily deliveries. Most of the participants are residents of Petersburg or Wrangell.

When compared to the more common otter trawl, the beam trawl is a relatively simple gear type in appearance and function. A strong wooden or metal beam acts as a head rope, and metal "shoes" connected directly to each end of the beam act as the breast of the trawl. Thus, two important net dimensions are controlled by rigid members: 1) the width of the mouth is determined by the length of the beam; and 2) the opening height of the net is determined by the height of the metal "shoes." Vessel length limits beam length. Most beam trawls are deployed with a single bridle and fish best on flat substrates. However, they can effectively fish some gradual side slopes and irregular bottoms. When not deployed, the beam trawl is stored on the vessel bulwarks, somewhat compromising the sea-keeping capabilities of the vessel.

Management is based on a closed season designed to prevent fishing on major stocks during the egg-hatch period from February 15 through April 30, guideline harvest levels determined by historic harvests, and three fishing periods in three of the major fishing areas. A fourth fishing period occurs in the Stikine Flats area. The fishing periods were based upon industry input to spread out the harvest and processing requirements. Multiple fishing periods also take advantage of growth and recruitment.

FISHERY DEVELOPMENT AND HISTORY

The first documented beam trawl harvest of shrimp in Southeast Alaska occurred in Thomas Bay (located in District 10) in 1915. This harvest was processed by floating canneries also located in Thomas Bay. By 1921 five processors were operating. Fleet size, production capacity, and expansion of fishing grounds occurred well into the 1950s. Prior to the development of the Westward Area (Statistical Area J) shrimp fisheries in 1959, the beam trawl fishery in Southeast Alaska was the major shrimp fishery in the state. Cook Inlet and Westward Region fisheries dominated the statewide production figures with harvests exceeding 100 million pounds through the 1970s. Cook Inlet and Westward harvests declined after that period and closed prior to the 1982/83 season and the Southeast Alaska beam trawl shrimp fishery is once again the major trawl shrimp fishery in the state.

From 1955 through 1967 annual beam trawl harvests ranged from 1,800,000 to 7,600,000 pounds, with an average of 3,600,000 pounds per year (Table 3.1). The number of vessels participating ranged from 10 to 22. The peak production year was 1958 when 14 vessels caught over 7,600,000 pounds. During the late 1960s and early 1970s harvest and effort declined. Seasonal harvests averaged 916,300 pounds and effort averaged 12 vessels during the 1970s. Through the 1980s the harvest and effort increased to an average of 1,409,500 pounds by an average of 19 vessels. During the 1990s the harvest has averaged 2,674,500 pounds. by an average of 34 permit holders. Some of the participants that were involved in the fishery between 1992 and 1997 were speculating on qualification into the limited entry program. Relatively few of the maximum of 51 vessels contributed substantially to the harvest or were dependent upon the fishery for a major portion of their fishing income. The effects of the limited entry program are evident in the 1998/99 fishery when only 24 permit holders participated. Recent fisheries have been worth approximately $1,000,000 per season. While the fishery continues to develop, fishing time is being reduced by premature closure of major fishing districts within each fishing period.

During the 1970s, harvest opportunities occurred in all major fishing areas throughout the year (Table 3.2). As substantial and consistent increases in effort began in 1980, guideline harvest levels were achieved quickly and it became necessary to close major fishing areas by emergency order. Fishing opportunities were no longer available in major fishing areas throughout the year, especially during the winter months. Typically, the months of May, July, and September received high effort, with each month providing harvests exceeding 500,000 pounds (Table 3.2). Seasonal harvests for the region approached 1,000,000 pounds prior to 1980 and now average about 2,700,000 pounds.

Prior to 1970 Districts 6 and 10 produced the majority of the beam trawl harvest and District 8 produced relatively low harvests. Harvests from District 10 occur in Farragut and Thomas Bays, and harvests from District 6 included Duncan Canal and Kah Sheets Bay. With the decline in abundance in District 10, the fishery became almost totally dependent upon District 6 and harvests from District 8 began to increase. From the 1969/70 through the 1978/79 fishing seasons, District 6 harvests averaged almost 600,000 pounds per season while District 8 harvests averaged less than 250,000 pounds per season (Table 3.3a). During this ten-season period, harvests from District 8 exceeded harvests from District 6 only once. Regulatory guideline harvest levels were increased in 1978. In the following decade through the 1988/89 season, average shrimp harvests from Duncan Canal were nearly 900,000 pounds, more than double that of the Stikine Flats area (Table 3.3b). Three fishing periods were established in regulations in 1989 for the four major fishing areas. During the last ten fishing seasons, the pattern of high harvests in District 6 relative to District 8 has continued but the total harvests from those districts have more than doubled (Table 3.3c.). Recent harvests from District 10 have increased and non-traditional fisheries in Districts 3, 5, 7, 9, 10, and 11 combined, have also produced significant harvests.

REGULATION DEVELOPMENT

Documentation describing shrimp fishing regulations is available since 1924. Regulations prior to that date are unknown. Regulations from 1924 through 1932 primarily concern fishing seasons. Size restriction regulations were first implemented in 1941. During the next decade closed areas were added and from 1947 through 1949 Duncan Canal, now a major shrimp fishing area, was closed to commercial fishing.

The beam trawl fisheries occur primarily in the vicinity of Petersburg and Wrangell. Until recently, most other areas were not significantly constrained by restrictive fishing seasons, fishing periods, or guideline harvest ranges (GHRs).

Fishing Seasons and Periods

Traditional Pink Shrimp Fisheries

A fishing season from May 1 through March 15 was established by 1924. A similar season has since been in place with some modifications to beginning and ending dates. The season is now May 1 to February 14. The purpose of the closed period is to protect female shrimp during the egg hatch period when fishing would reduce the reproductive potential of the stock.

As the fishery intensified during the 1980s, the GHR was taken in successively fewer days. In response, three fishing periods were established beginning in 1989. These periods were May 1 through June 30, July 1 through August 31, and September 1 through February 14. A fourth fishing period, December 1 through February 14, was added for District 8 only, Stikine Flats, in 1997. These periods were designed to lengthen the total season in major districts and to reduce fishing effort during periods of growth and recruitment.

Non-Traditional Pink Shrimp Fisheries

Prior to 1994 all fishing districts in Southeast Alaska, except District 8 and a portion of District 6 (Duncan Canal and Kah Sheets Bay), District 7 (Eastern Channel), and District 10 (Thomas and Farragut Bays), were open throughout the year. During the early 1990s large otter trawling harvester-processors requested permits to fish for shrimp in the region, leading to requests to the commissioner to close shrimp fisheries in outside waters. The controversy surfaced because some members of other fishing organizations felt that trawlers were using a loophole in the regulations to either prospect or target other species, like rockfish. Initial closures were made by either emergency regulation or emergency order. The issue was brought before the Board of Fisheries and resulted in the closure for Districts 1, 2, 4, and 12 through 16, which had low and sporadic historical effort and harvests.

At the request of industry in 1997, regulations were developed to provide additional fishing time during the egg-hatch period in most of the non-traditional areas if their respective guideline harvest levels have not been achieved during the normal fishing time of May through mid-February. Justification for the change was that these areas required more exploration, time, and expense than the traditional fishing areas, the months of March and April were generally free of commercial and personal use shrimp and crab pots, and weather was improved over the sometimes harsh winter conditions. The additional fishing time period is from February 15 through April 30.

Directed Sidestripe Shrimp Fisheries

In 1997, regulations were adopted to provide for directed sidestripe shrimp fisheries by beam trawl only during fishing seasons and periods and in areas established by the commissioner by emergency order. Additional conditions include limiting the vessel from participating at the same time in a directed pink shrimp fishery, a larger minimum mesh size, and mandatory logbook completion. To date, fishing opportunities have been provided during three seasons in District 8 only.

Size Restrictions

As early as 1941 regulations specified that not more that 50% of the shrimp harvested could be less than three inches total length. These regulations were altered to no more than 25% in 1942, and in 1948 the size was changed to less than 2.5" total length. By 1952 there were no size regulations and size of shrimp landed was only controlled by industry through price.

By 1979 the Board of Fisheries adopted a policy to discourage the harvest of shrimp less than two years of age. This policy exists today and instructs the department to take action when the fishery targets on segregated schools of small shrimp. Management measures are to optimize the harvest of larger female pink shrimp while minimizing retention of males, transitionals, and smaller females.

In 1997, new regulations in Southeast Alaska defined the minimum average size of shrimp that could be sold. Shrimp taken by beam trawl gear must be at least 150 count per pound. To determine the average count per pound, one sample of at least one pound in weight, must be taken from each 500 to 1,000 pounds of shrimp, up to a maximum of 20 samples.

Quotas and Guideline Harvest Ranges

Traditional Pink Shrimp Fisheries

In 1977, harvest quotas for each of the four major fishing areas (District 8 and portions of Districts 6, 7, and 10) were first established. These quotas were based on historical harvest records with potential adjustment based on stock conditions. Strict quotas were difficult to monitor and regulate. In 1978, quotas were replaced by GHRs that provided more flexibility for in-season management, which was based upon fishery performance and size-class distribution. The fishery continued to intensify through the influx of effort and increased processing capacity. In some districts, specifically Districts 8 and a portion of District 6, the seasonal GHR was achieved early in the fishing season, necessitating an emergency order closure for the remainder of the season.

In 1988 the GHRs were evenly distributed through three fishing periods to lengthen the fishery and to take advantage of growth and recruitment which occurred during the spring and summer months. Guideline harvest ranges for each of the three fishing periods were: a portion of District 6 from 80,000 to 400,000 pounds; a portion of District 7 from 15,000 to 50,000 pounds; a portion of District 10 from 5,000 to 75,000 pounds; and all of District 8 from 25,000 to 175,000 pounds. In 1997, with the addition of a fourth fishing period in District 8 and an increase in the upper GHR from 175,000 to 250,000 pounds. the seasonal harvest potential increased by half a million pounds.

Non-Traditional Pink Shrimp Fisheries

In 1994, seasonal GHRs of 0 to 100,000 pounds were established for Districts 3, 5, 9, and 11 and remaining portions of Districts 6, 7, and 10. In 1997, at the request of industry, the total District 11 GHR was increased and is now more than triple the 1994 GHR. Seasonal GHRs were established by section: 11-A, 11-B, and 11-C from 25,000 to 75,000 pounds in each; and 11-D from 50,000 to 150,000 pounds.

Directed Sidestripe Shrimp Fisheries

With the implementation of the directed sidestripe fishery in 1997, a limit of 50,000 pounds of shrimp may be taken from any district or section during a season. Participants can not concurrently participate in a pink shrimp fishery, must use a large mesh net, and complete logbooks.

Gear Restrictions

In 1962 regulations defining a minimum mesh size used in beam trawls were established for a portion of the Petersburg-Wrangell area. By 1969 similar regulations were in place for all areas. In 1997 the minimum mesh size was increased. The current regulatory mesh size is approximately 1.35" stretched measure. Due to the relatively low market value of small pink shrimp, many fishers are currently using web between 1.38" and 1.50" stretched mesh, to reduce their harvest of small pink shrimp.

Under the regulations provided in the directed sidestripe fishery that was adopted in 1997, all shrimp trawl webbing must be a least one and seven-eighths inch stretched measure.

In 1959 otter trawls were not allowed in the Petersburg-Wrangell area in major locations utilized by the beam trawl fishery. Prior to the 1963/64 fishing season this regulation was altered to the present district boundaries.

In 1980 beam trawling was prohibited in waters of Lituya Bay (District 16) by the Alaska Board of Fisheries and in 1985 trawling was prohibited in waters of Glacier Bay by the National Park Service. Beginning in mid 1986, trawling was prohibited in waters of Tenakee Inlet (District 12). During the 1997 BOF meeting, otter trawls were eliminated as a legal gear type in southeast Alaska, effective May 8, 1998.

Limited Entry

The Commercial Fisheries Entry Commission, in response to petitions received from beam trawl fishers during 1995 and 1996, established January 1, 1997 as the qualification date for limited entry with the four years immediately preceding being the qualification period. Therefore, to be eligible to apply for an entry permit, an individual would have had to been a permit holder during at least one of the years 1993-1996. The proposed maximum number of limited entry permits was set at 41. The application period for entry permits was between October 15, 1998 and March 1, 1999. CFEC received 65 applications so 24 should be denied.

1998/99 SEASON SYNOPSIS

The 1998/99 shrimp beam trawl fishery harvested 2,264,641 pounds of shrimp in 834 landings by 24 vessels. The maximum number of vessels that fished during any single month did not exceed 21 (Table 3.4). The harvest was comprised of 92% pink shrimp, 6% sidestripe shrimp, 1% coonstripe shrimp and a trace of spot prawns. Total value of this fishery was approximately $739,548. The fishery was characterized by intense effort during three of four fishing periods in District 8, an abundance of shrimp in the Duncan Canal and Kah Sheets Bay portion of District 6, an increased harvest from District 10, and significant harvest contributions from Districts 3 and 11. During the season, ten emergency orders were written to control the fishery. The major fishing areas are discussed below in order of descending contribution to the total harvest.

Duncan Canal and Kah Sheets Bay (Northern District 6)

The total seasonal harvest of shrimp from the Duncan Canal and Kah Sheets Bay portion of District 6 totaled 989,114 pounds in 285 landings. This harvest represented almost 44% of the total region trawl shrimp harvest. Sixteen of the 24 shrimp beam trawl vessels landed shrimp from this fishing area.

During the first fishing period, May 1 through June 30, the area remained open for the entire fishing period. This date was much later than normal because much of the early effort was concentrated in the Stikine Flats. Effort entered the Duncan Canal and Kah Sheets grounds after the closure of the Stikine Flats pink shrimp fishery (May 8, 1998) and the directed sidestripe fishery (May 15-June 23, 1998). The harvest was approximately 352,428 pounds from 114 landings.

The fishery remained open almost the entire second fishing period, July 1 to August 25 and during the entire third period, September 1 to February 14, 1999. Harvests totaled approximately 442,000 pounds and 194,656 pounds in 118 landings and 53 landings for the two periods, respectively. Effort was curtailed in the third fishing period because of plant processing closures with all deliveries but one made prior to December of 1998.

Stikine Flats (District 8)

Sixteen vessels made 368 landings from District 8 during the fishing season. The seasonal harvest of 816,465 pounds from the Stikine Flats represented 36% of the total regional harvest by beam trawl vessels. Approximately 88,400 pounds of this harvest was comprised of sidestripe shrimp, which sold for an average of $1.31/pound. The Stikine Flats provided more sidestripe shrimp than any other single fishing area during the season. This high sidestripe harvest was due to effort during the directed sidestripe fishery and by-catch of sidestripe shrimp during the directed pink shrimp fishery. It was necessary to close the fishery by emergency order during three of the four fishing periods in which pinks were the targeted species.

The first fishing period opened on May 1, 1998 and the harvest of about 223,388 pounds were harvested by the closure on May 8, 1998. The fishery was characterized by large harvests of good quality shrimp. Effort was high, partially due to improved prices and the lack of other fishing opportunities. A directed sidestripe fishery was opened and closed by emergency order from May 15 through June 23, 1998. Five permit holders landed approximately 26,100 pounds of shrimp. Sidestripe shrimp made up 88% of the landed catch. The fleet did not request further directed sidestripe fisheries this season.

The second fishing period was open for fourteen days and resulted in a harvest of 223,388 pounds. The slightly longer fishing period was because a portion of the fleet opted to participate in various salmon fisheries. The area was closed on July 14, 1998.

Twelve permit holders participated during the third fishing period, which extended from September 1 through October 31, 1998. The fishery was closed because the landed harvest of 260,092 pounds slightly exceeded the GHR.

A fourth fishing period established by the Board of Fisheries in January of 1997, opened on December 1, 1998 and remained open throughout the regulatory closure on February 14, 1999. Effort was limited due to plant processing closures. Seven vessels landed 24,215 pounds of product spread out over the entire fishing period.

Thomas and Farragut Bays (Southern District 10)

Thomas Bay shrimp stocks continued the improvement first seen during the 1991/92 fishing season. The total seasons harvest remains confidential due to limited participation. All three fishing periods opened by regulation and closed by emergency order.

Eastern Channel (District 7)

The total season's harvest from Eastern Channel was 62,689 pounds from 40 landings by 8 permit holders. This harvest was almost entirely made up of pink shrimp. Approximately 95% of the total harvest occurred during the first opening in May. As a result, the fishery in Eastern Channel was closed early by emergency order during the first fishing period on May 28, 1998. Effort and resulting harvests were relatively light during the second fishing period with five permit holders harvesting 3,726 pounds in six landings. There was no participation in the third open period, which by regulation extended from September 1 through February 14, 1999.

Other Fishing Districts

Beam trawl fishing has occurred at low and sporadic levels outside the Petersburg-Wrangell area since at least the 1969/70 season. Fishing opportunities exist in Districts 3, 5, 9, 11, and portions of Districts 6, 7, and 10 during the normal fishing season. These districts are managed with a single fishing season and generic guideline harvest levels not to exceed 100,000 pounds. Participants must notify the department prior to fishing and logbook completion and submission are mandatory. During this past season these other districts contributed a harvest of almost 120,000 pounds in 78 landings. The majority of this harvest was reported from Districts 3 and 11.

The fleet was provided additional fishing time in some portions of Districts 6 and 10 and sections 11-A and 11-C from February 15, 1998 through April 30, 1998 because GHR's had not been reached during the normal fishing season. Fishers were required to contact the department and submit completed logbooks with their harvest ticket. Three of the four areas were fished, with relatively insignificant harvest being taken. Information is confidential due to fewer than three permit holders making landings.

1999/00 SEASON OUTLOOK

Through November 1999, the 1999/00 seasonal harvest from 19 vessels totaled 1,824,203 pounds. Almost 52,500 pounds of sidestripe shrimp, 13,600 pounds of coonstripe shrimp and 5,300 pounds of spot prawns are included in the season harvest to date. The seasonal harvest for all fishing species and areas was the lowest during the 1990s. This harvest was low because of a reduction in available processing capabilities, and was not because of stock abundance.

Fishing intensity was concentrated in a portion of District 6 (Duncan Canal and Kah Sheets Bay), District 8 (Stikine Flats), and a portion of District 10 (Thomas and Farragut Bays). Eight emergency orders were written to manage the fishery within current regulations. The Stikine Flats and Thomas and Farragut Bays were closed early during the first two fishing periods. Harvests from the Duncan Canal and Kah Sheets Bay portion of District 6 were below the GHRs for each fishing period.

Markets appear to be reasonable for the near future. Effort levels declined significantly compared to the previous three seasons in terms of number of vessels and fishing intensity. Markets are developing for high quality sidestripe shrimp, coonstripe shrimp, and the few spot prawns that are taken incidentally during the pink shrimp fishery. Some fishers are modifying gear to target specific grounds during certain times of the year for larger shrimp, especially sidestripe and coonstripe shrimp.

Present information does not allow the department to project future abundance in a scientific manner. Stock assessment data is not available, and shrimp samples obtained through port sampling are not analyzed in sufficient time to effect management decisions. But, it is possible to make a general qualitative statement concerning stock strength. Relatively strong year-classes have been evident in major stocks and have supported relatively strong harvests during the past few fishing seasons. Major stocks are expected to remain strong for the near term.

The increased use of larger mesh web in trawl construction could increase the quality of the pink shrimp available, and possibly increase the exvessel value of the harvest. Even larger web is being used to target sidestripe shrimp, with some significant by-catches of coonstripe shrimp. However, the use of larger mesh web does have potential negative biological consequences. Larger web will tend to target more strongly on the female portion of the stock. The removal of female shrimp at an increasing rate could reduce the reproductive potential of the stock and result in smaller populations during future seasons. Without pre-season stock assessment methods, in-season monitoring tools, and with management based on historic harvests, which included a broader segment of all year-classes, it is possible to over-exploit some stocks prior to taking appropriate management action. Using beam trawls to target spot prawns could have detrimental effects on the habitat and future spot prawn production.

The continued development of beam trawl fisheries in districts outside the boundaries of the four major fishing areas could provide more product to the fishery, particularly with the high proportion of larger and more valuable sidestripe shrimp found in some locations. Regulation changes may be needed to adequately control the expansion of the fishery and to prevent high-grading of some species of shrimp while dumping the less desirable species or smaller shrimp.

Effort decreased from 24 vessels during the 1998/99 season to 19 vessels so far this season. A portion of this decrease is undoubtedly because the limited entry permit qualification is over. Another portion of the decrease is due to the reduction in processing capabilities, or the need to use existing facilities to process product from other fisheries. As the limited entry program is fully implemented, permits will be purchased by fishers desiring diversification. This may result in higher effort levels, more efficient and species-specific gear, and a continued development of the beam trawl fishery in non-traditional fishing locations. In turn, these changes identify the need to establish a research program for necessary biological information, a more active management program, and the development of a management plan to ensure future conservation goals are achievable.

Table 3.1. Statistical Area A (Southeast Alaska) shrimp beam trawl harvest, number of permits, number of landings, pounds per permit, and pounds per landing, 1955 to present.[a]

Year/ Season	Harvest in Pounds	Number of Permits	Landings	Pounds per Permit	Pounds per Landing
1955	1,777,122	15		118,475	
1956	3,301,598	15		220,107	
1957	2,350,499	10		235,045	
1958	7,605,871	14		543,277	
1959	5,518,843	22		250,857	
1960	3,343,373	21	1,007	159,208	3,320
1961	4,212,300	20	1,394	210,615	3,022
1962	3,884,050	22	1,400	176,548	2,774
1963	3,110,340	20	1,080	155,517	2,880
1964	2,793,101	13	1,092	214,854	2,558
1965	2,941,429	13	1,338	226,264	2,198
1966	3,784,597	14	1,663	270,328	2,276
1967	2,203,753	13	1,105	169,519	1,994
1968/69	2,003,753	12	925	166,979	2,166
1969/70	1,840,727	11	952	167,339	1,933
1970/71	742,404	11	477	67,491	1,556
1971/72	1,050,978	9	592	116,775	1,775
1972/73	797,387	9	421	88,599	1,894
1973/74	674,386	8	460	84,298	1,466
1974/75	1,205,617	20	434	60,281	2,777
1975/76	983,609	12	450	81,967	2,185
1976/77	768,930	14	476	54,924	1,615
1977/78	949,043	10	404	94,904	2,349
1978/79	1,033,325	9	519	114,814	1,990
1979/80	956,927	17	982	56,290	974
1980/81	843,737	21	920	40,178	917
1981/82	919,275	15	524	61,285	1,754
1982/83	1,397,026	15	455	93,135	3,070
1983/84	1,756,533	18	667	97,585	2,633
1984/85	1,294,545	23	811	56,285	1,596
1985/86	429,224	16	252	26,827	1,703
1986/87	2,203,935	16	435	137,746	5,066
1987/88	1,761,636	25	388	70,465	4,540
1988/89	1,675,643	18	527	93,091	3,179
1989/90	1,813,032	21	645	86,335	2,810
1990/91	2,494,957	23	793	108,476	3,146
1991/92	2,934,341	28	1,036	104,798	2,832
1992/93	2,375,742	41	922	57,945	2,576
1993/94	2,135,500	25	705	85,420	3,029
1994/95	3,223,791	25	814	128,952	3,960
1995/96	3,053,316	48	793	63,611	3,850
1996/97	2,536,985	51	884	49,745	2,869
1997/98	3,051,197	42	983	72,648	3,103
1998/99[b]	2,264,641	24	834	94,360	2,715

[a] Data from 1955 through the 1968/69 seasons is from annual reports. Harvest and effort data from 1969/70 to the present is from Integrated Fisheries Data Base (IFDB).

[b] Most recent year's data should be considered preliminary.

Table 3.2. Statistical Area A (Southeast Alaska) shrimp beam trawl harvest in thousands of pounds by month and season, 1969/70 to present.

Season	Month												
	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Total
1969/70	326.7	280.2	78.8	129.1	184.7	241.2	119.6	165.2	160.0	100.6	32.4	22.4	1,840.7
1970/71	131.3	105.1	65.4	79.8	49.7	64.3	54.8	59.2	59.9	56.8	*	13.2	742.4
1971/72	139.0	106.3	144.5	106.5	69.7	78.3	101.6	71.1	66.0	121.1	38.7	*	1,051.0
1972/73	168.5	126.4	77.2	*	*	44.7	64.0	46.3	81.6	42.2	6.1	8.5	797.4
1973/74	96.3	124.1	*	*	*	*	59.1	64.8	60.3	29.2	*	8.4	674.4
1974/75	160.9	199.2	202.4	168.0	120.1	61.4	73.9	90.8	104.2	21.6	*	*	1,205.6
1975/76	180.7	130.3	67.2	*	112.3	154.5	73.0	77.8	38.9	46.1	*	6.7	983.6
1976/77	78.8	171.7	120.0	118.8	61.8	37.4	55.2	33.3	65.0	25.7	*	*	768.9
1977/78	73.7	235.3	147.9	166.6	126.2	48.3	29.5	18.7	81.2	21.7	0.0	0.0	949.0
1978/79	107.0	130.9	140.6	240.2	112.0	93.1	67.8	36.0	72.3	22.5	8.3	*	1,033.3
1979/80	98.2	154.9	146.6	177.4	104.2	55.1	58.4	39.6	66.3	48.1	*	*	956.9
1980/81	153.8	168.6	164.9	153.7	54.2	30.2	35.5	12.2	33.6	31.6	5.5	0.0	843.7
1981/82	165.1	183.4	124.0	168.8	81.1	52.7	36.5	48.3	33.0	22.3	0.9	3.1	919.3
1982/83	181.1	171.7	168.8	159.4	134.0	50.1	60.7	82.0	152.6	119.8	64.4	52.5	1,397.0
1983/84	436.3	249.0	287.0	218.2	127.5	132.0	83.3	86.9	101.7	16.2	9.0	9.6	1,756.5
1984/85	156.3	252.5	272.5	232.8	132.9	59.5	61.8	49.7	51.9	22.5	*	*	1,294.5
1985/86	125.6	105.3	46.1	23.2	39.1	13.8	31.3	27.0	*	7.7	*	*	429.2
1986/87	294.4	508.2	576.0	446.8	372.0	*	*	*	*	*	*	*	2,203.9
1987/88	634.0	721.0	291.2	90.8	*	*	*	*	*	6.0	*	*	1,761.6
1988/89	647.2	369.0	258.4	137.9	*	2.5	82.8	127.3	37.8	*	*	*	1,675.6
1989/90	473.6	236.2	259.0	173.4	224.3	115.8	*	38.4	167.8	53.4	*	*	1,813.0
1990/91	546.7	336.5	386.5	357.8	293.3	147.4	161.2	148.7	16.8	9.4	17.1	73.4	2,495.0
1991/92	611.6	325.5	887.2	79.1	336.4	219.0	167.2	165.6	113.6	14.8	*	13.8	2,934.3
1992/93	469.3	253.7	404.4	295.7	194.5	186.4	136.8	112.4	131.8	65.5	58.3	67.0	2,375.7
1993/94	548.0	215.4	372.0	239.2	121.3	86.9	104.5	100.3	147.4	85.7	112.1	*	2,135.5
1994/95	560.0	266.2	574.6	468.2	196.3	96.9	149.3	188.5	387.0	41.9	231.6	63.5	3,223.8
1995/96	686.6	338.2	522.3	344.7	515.0	66.7	137.8	55.8	62.7	157.9	104.1	61.3	3,053.3
1996/97	782.8	262.2	609.0	162.8	510.3	100.3	73.3	7.6	*	1.4	*	*	2,537.0
1997/98	727.8	237.8	637.6	183.9	677.6	142.2	129.0	260.6	0.0	43.3	*	0.0	3,051.2
1998/99[a]	524.8	260.8	501.3	317.7	348.7	138.8	102.6	3.4	22.3	15.5	*	*	2,264.6

[a] Most recent year's data should be considered preliminary.

* Where number of permits participating is less than three, information is confidential.

Table 3.3a. Statistical Area A (Southeast Alaska) shrimp beam trawl fishery harvest in thousands of pounds by season and district, 1969/70 through 1978/79.

	Year									
District	69/70	70/71	71/72	72/73	73/74	74/75	75/76	76/77	77/78	78/79
1	0.0	*	*	0.0	*	*	*	1.6	0.0	*
2	0.0	0.0	0.0	0.0	0.0	1.3	0.1	0.0	0.0	0.0
3	0.0	*	*	*	0.0	0.0	*	*	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.0	0.0	0.0	0.0	0.0	*	0.0	0.0	0.0
6: Duncan	865.5	344.4	442.4	450.3	260.0	973.2	554.2	610.2	669.7	625.0
6: Sumner	0.0	0.0	0.0	*	0.0	0.0	257.6	10.7	*	*
7: Eastern	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7: Blake	0.0	38.1	67.0	35.7	48.7	10.4	14.6	29.2	40.3	140.1
8: Stikine	609.7	158.5	285.7	219.6	323.4	212.4	84.5	85.5	176.0	261.9
9	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10: Thomas	350.1	198.6	252.3	89.9	*	*	*	27.9	*	3.4
10: Upper Fred	0.0	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	*	0.0	0.0	0.0	0.0	*	*	*	*	*
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	*	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1,840.7	742.4	1,051.0	797.4	674.4	1,205.6	983.6	768.9	949.0	1,033.3
Landings	952	477	592	421	460	434	450	476	404	519
Permits	11	11	9	9	8	20	12	14	10	9

* Where number of permits participating is less than three, information is confidential.

Table 3.3b. Statistical Area A (Southeast Alaska) shrimp beam trawl fishery harvest in thousands of pounds, by season and district, 1979/80 through 1988/89 season.

	Year									
District	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87	87/88	88/89
1	*	*	*	*	*	*	*	*	0.0	*
2	1.5	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3	*	*	*	*	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
5	*	0.0	0.0	0.0	0.0	*	0.0	0.0	0.0	0.0
6: Duncan	427.4	415.0	693.8	1,199.6	1,015.4	523.9	235.7	1,645.3	1,225.7	1,043.9
6: Sumner	0.0	*	*	0.0	0.0	17.7	*	*	*	*
7: Eastern	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*
7: Blake	109.8	77.9	31.5	11.8	138.6	101.3	30.6	100.6	75.8	15.9
8: Stikine	405.7	342.5	88.6	51.0	545.0	610.8	160.9	432.4	436.3	590.0
9	0.0	*	0.0	*	*	0.0	0.0	0.0	0.0	0.0
10: Thomas	2.8	0.0	0.0	*	26.3	33.8	*	*	*	*
10: Upper Fred	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	*	*	0.0	0.0	0.0	0.0	0.0	*	0.0
12	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*	0.0	0.0
15	*	*	*	*	2.0	*	*	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	956.9	843.7	919.3	1,397.0	1,756.5	1,294.5	429.2	2,203.9	1,761.6	1,675.6
Landings	982	920	524	455	667	811	252	435	388	527
Permits	17	21	15	15	18	23	16	16	25	18

[a] Most recent year's data should be considered preliminary.

* Where number of permits participating is less than three, information is confidential.

Table 3.3c. Statistical Area A (Southeast Alaska) shrimp beam trawl fishery harvest in thousands of pounds, by season and district, 1989/90 to present.

	Year									
District	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99[a]
1	*	*	0.0	0.0	Closed	Closed	Closed	Closed	Closed	Closed
2	0.0	0.0	0.0	*	Closed	Closed	Closed	Closed	Closed	Closed
3	0.0	80.1	20.4	125.3	18.9	31.6	19.2	69.9	13.1	46.8
4	0.0	0.0	0.0	0.0	Closed	Closed	Closed	Closed	Closed	Closed
5	0.0	0.0	0.0	*	0.0	*	182.0	74.1	11.7	0.0
6: Duncan	1,006.9	1,565.5	1,680.5	1,184.8	829.0	1,406.7	1,355.6	1,285.2	1,250.6	989.1
6: Sumner	0.0	*	35.4	*	*	*	0.0	*	0.0	0.0
7: Eastern	17.5	55.5	74.1	34.7	*	232.2	168.1	115.2	174.7	62.7
7: Blake	70.5	40.4	96.9	58.1	50.7	0.0	3.6	8.4	*	0.9
8: Stikine	676.7	652.0	697.9	683.6	834.3	848.5	905.7	611.9	1,347.8	816.5
9	0.0	*	*	19.6	*	0.0	*	*	*	*
10: Thomas	*	*	321.3	148.7	219.7	241.7	239.7	280.8	240.1	*
10: Upper Fred	0.0	0.0	*	0.0	0.0	*	*	27.5	16.3	*
11	0.0	*	2.8	97.7	109.8	295.0	170.3	57.4	20.5	*
12	0.0	0.0	*	0.0	Closed	Closed	Closed	Closed	Closed	Closed
13	0.0	0.0	*	0.0	Closed	Closed	Closed	Closed	Closed	Closed
14	0.0	0.0	0.0	0.0	Closed	Closed	Closed	Closed	Closed	Closed
15	*	*	0.0	*	Closed	Closed	Closed	Closed	Closed	Closed
16	0.0	0.0	0.0	0.0	Closed	Closed	Closed	Closed	Closed	Closed
Total	1,813.0	2,495.0	2,934.3	2,375.7	2,135.5	3,223.8	3,053.3	2,537.0	3,051.2	2,264.6
Landings	645	793	1,036	922	705	814	793	884	983	834
Permits	21	23	28	41	25	25	48	51	42	24

* Where number of permits participating is less than three, information is confidential.

Table 3.4. Statistical Area A (Southeast Alaska) shrimp beam trawl harvest and landings ( ) by district and month, 1998/99.[a]

	Fishery								
Month	Duncan Canal	Sumner Strait	Eastern Channel	Blake Passage	Stikine Flats	Thomas Bay	all Others Southeast	Total Permits	Total Harvest
May	130,330 (46)		58,963 (6)		235,882 (106)	*	9,972 (13)	21	524,825
June	222,098 (69)			*	13,598 (22)		24,725 (14)	16	260,801
July	151,018 (41)		3,726 (5)	*	281,976 (96)	*	6,888 (11)	17	501,331
August	291,012 (77)			*		*	3,743 (6)	10	317,656
September	95,902 (27)				218,237 (100)	*	9,566 (7)	17	348,719
October	49,524 (13)				42,557 (21)	*	*	6	138,757
November	48,812 (12)					*	*	5	102,625
December	*				*		*	4	3,422
January							*	5	22,268
February							3,600 (1)	6	15,535
March	Closed						*	*	*
April	Closed						*	*	*
Total Harvest	989,114		62,689	863	816,465	*	119,524		2,264,641
Landings	285		40	4	368	*	78		834
Permits	16		8	3	16	*	8		24

[a] Recent season's data should be considered preliminary.

* Where number of permits participating is less than three, information is confidential.

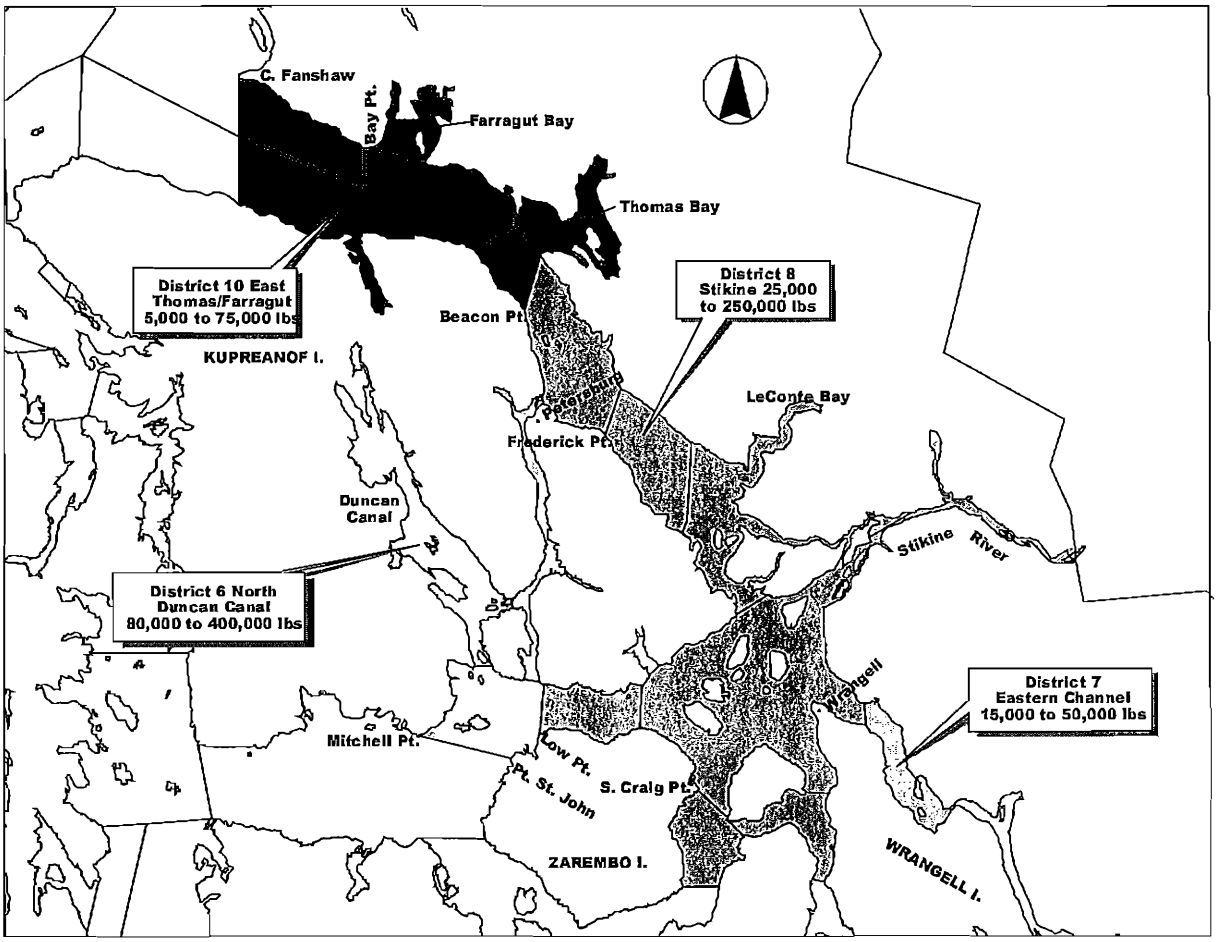

Figure 3.1. Traditional beam trawl shrimp regulatory areas and fishing period guideline harvest ranges for Southeast Alaska.